

# LEARNING STAGE ONE

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## LEARNING STAGE ONE

1. Python Basic Grammar Learning
  - 1.1 Learning Target
  - 1.2 Learning Materials (Choose one of them)
2. NumPy Learning
  - 2.1 Learning Target
  - 2.2 Learning Materials (Choose one of them)
3. Matplotlib Learning
  - 3.1 Learning Target
  - 3.2 Learning Materials (Choose one of them)
4. OpenCV Learning
  - 4.1 Learning Target
  - 4.2 Learning Materials

## 1. Python Basic Grammar Learning

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### 1.1 Learning Target

- ☒ Installing Python
- ☒ Data Types, Booleans, Variables, Constants
- ☒ Strings
- ☒ Lists, Tuples
- ☒ Conditional Statements
- ☒ Loops
- ☒ Dictionaries, Sets
- ☒ Functions
- ☒ Classes
- ☒ Files I/O

### 1.2 Learning Materials (Choose one of them)

- Chinese Tutorial: [Python Chinese Tutorial by Xuefeng Liao](#)
- English Tutorial: [Python programming tutorial for beginners](#)

## 2. NumPy Learning

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## 2.1 Learning Target

In the early stage, you only need to master some basic usage of the **NumPy** library, you don't need to learn **NumPy** very carefully and comprehensively. In the future, if you encounter a part that you can't write, you can absolutely look up some relevant materials about **NumPy**.

## 2.2 Learning Materials (Choose one of them)

- Chinese Tutorial: [NumPy Reference Manual](#)
- English Tutorial: [NumPy: the absolute basics for beginners](#)

## 3. Matplotlib Learning

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### 3.1 Learning Target

In the early stage, you only need to master some basic usage of the **Matplotlib** library, you don't need to learn **Matplotlib** very carefully and comprehensively. In the future, if you encounter a part that you can't write, you can absolutely look up some relevant materials about **Matplotlib**.

### 3.2 Learning Materials (Choose one of them)

- Chinese Tutorial: [Matplotlib Tutorial Simplified Chinese](#)
- English Tutorial: [Matplotlib Usage Guide](#)

## 4. OpenCV Learning

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### 4.1 Learning Target

- ✓ P1-P14 in the video below.
- ✓ P29 in the video below.
- ✓ P31 in the video below.

### 4.2 Learning Materials

- Chinese Video Tutorial: [OpenCV Tutorials for Beginners](#)